

changing words, rules and transitions in a grammar in the middleware layer based on the word change data, rule change data and transition change data received.

53. (original) A method of formatting data for use by a speech engine and an audio device, comprising

obtaining, at a middleware layer which facilitates communication between the speech engine and an application, a data format for data used by the engine; obtaining, at the middleware layer, a data format of data used by the audio device;

determining, at the middleware layer, whether the engine data format and the audio data format are consistent; and if not, utilizing the middleware layer to attempt to change the data format of the data used by at least one of the engine and the audio device.

54. (original) The method of claim 53 and further comprising:

if the attempt to change the data format used by the at least one of the engine and the audio device is unsuccessful, invoking a format converter to change data format for data between the engine and the audio device to ensure the data formats are consistent.

REMARKS

This is in response to the Office Action mailed on April 28, 2005. Claims 1-39, 47 and 50-54 were pending in that action. Claims 47 and 50-54 were indicated as allowable. Claims 1-3 and 6-39 were rejected. Claims 4 and 5 were objected to. With this response, all claims remain unchanged but for a minor amendment to the dependency of claim 50.

In this case, on October 1, 2004, Applicant received a first Office Action wherein the only substantive rejection based on cited prior art was against claims 40-48. On pages 8-11 of that action, the Examiner provided Applicant with instructions as how minor adjustments could be made to place claims 1-39 and 49-54 in condition for allowance. In reliance on this indication of allowable subject matter, Applicant prepared and filed a response on November 23, 2004. In this response, Applicant canceled all substantively rejected claims and, for the remaining claims, addressed all noted hindrances to allowability. In addition, it is at least worth noting that Applicant also filed additional patent applications that incorporated assumptions based on the Examiner's comments in the Office Action of October 1, 2004.

Under the circumstances, Applicant was surprised to receive the latest Office Action of April 28, 2005, which essentially revokes the previous indication that claims 1-39 are in allowable form, and establishes a substantive rejection against those claims. Section 706.04 of the Manual of Patent Examining Procedure (M.P.E.P.) mandates that great care should be exercised in submitting a rejection of previously allowed claims.

Applicant certainly respects the fact that the Examiner is entitled to a change of mind, especially when new or additional art is encountered. However, notably, every reference cited against the claims in the latest Office Action was noted without rejection in the previous Office Action of October 1, 2004. Applicant is at a loss to understand why the rejections based on these references were not previously established.

Nevertheless, for reasons that will be explained in detail below, it is respectfully submitted that the cited references, considered independently or in combination, fail to teach or suggest the elements of the rejected claims 1-3 and 6-39. This being the case, Applicant will request that the rejections be withdrawn and that this case be placed on track for

allowance, consistent with Applicant's expectations following the previous Office Action. Applicant respectfully requests reconsideration in light of the comments that follow.

Applicant hereby affirms the indication in the latest Office Action that claims 47 and 50-54 are in allowable form. With the present response, a minor amendment has been made to claim 50 to correct what Applicant believes is a minor error to the stated dependency. Consideration and entry of this amendment are respectfully solicited. Applicant also affirms the indication that claims 4 and 5 would be allowable if re-written. At this time, Applicant has not re-written those claims based on a belief, to be described below, that the base and intervening claims also contain allowable subject matter. It is noted that claims 40-46, 48 and 49 were previously canceled.

Thus, the remaining issues in the prosecution of the present application pertain to claims 1-3 and 6-39. Of these claims, only claim 1 is independent. Claims 2, 3 and 6-39 are dependent upon claim 1.

On page 3 of the Office Action, independent claim 1 is rejected under 35 U.S.C. §102(a) as being anticipated by the Hataoka reference. For reasons that will now be discussed in detail, it is respectfully submitted that the Hataoka reference fails to teach or suggest the elements of claim 1.

Claim 1 recites a middleware layer configured to facilitate communication between a speech-related application and a speech-related engine. As claimed, the middleware layer includes a speech component having an application-independent interface and an engine-independent interface. The claimed application-independent interface is configured to be coupled to the application. The claimed engine-independent interface is configured to be coupled to the engine.

While the Hataoka reference does use the term "middleware" to describe a collection of speech processing

components, the described middleware is fundamentally different than the claimed middleware. The middleware described in the Hataoka reference specifically includes a speech recognition module and a speech synthesis module (see abstract). As is clearly shown in Table 1 on page 693 of the cited reference, the described middleware specifically includes recognition and synthesis engines. As a complete reading of the Hataoka reference makes clear, the inclusion of the engines in the middleware layer makes sense because the described purpose of the middleware software is to provide a layer of speech-oriented support that serves as a connection between related hardware and user applications (see introduction). It is specifically stated in the introduction of the Hataoka reference that the processing middleware consists of speech recognition and speech synthesis software on a microprocessor.

There are multiple reasons why the elements of claim 1 are distinguishable from the cited reference. An obvious difference is that the cited reference in no way teaches or suggests an engine-independent interface. As has been established, the "middleware" described in the Hataoka reference includes specific recognition and synthesis components. The claim recites a middleware layer that, as claimed, is essentially independent from any requirement of a specific speech-related engine. The cited reference neither teaches nor suggests any such separation of components.

Applicant believes that it is possible that the Examiner may be misunderstanding the function of the middleware described in the Hataoka reference. For example, in paragraph 13 of the latest Office Action, the Examiner describes the Hataoka "middleware" as acting as an intermediary between applications and engines. This is a mischaracterization of the Hataoka middleware. The Hataoka middleware includes the engines. In fact, as is clearly stated in the introduction and in multiple

places throughout the Hataoka reference, the Hataoka middleware acts as an intermediary to connect hardware (assumedly including speech-oriented input and output mechanisms) to user applications. In essence, the Hataoka middleware is a microprocessor equipped with software that enables the microprocessor to deliver speech functionality that operates between a user application (such as car navigation systems, handheld PCs, game machines, etc.) and corresponding hardware. In no way is the Hataoka middleware software engine-independent. In fact, it is engine-dependent.

In order to reject a claim under 35 U.S.C. §102, the examiner must find every limitation of the claim in the cited reference. As has been discussed, Applicant submits that independent claim 1 recites limitations that are neither taught nor suggested by the Hataoka reference. Thus, it is respectfully submitted that claim 1 is allowable in its present form.

Further, it is respectfully submitted that dependent claims 2, 3 and 6-39 are in allowable form at least based on their dependence upon what Applicant believes to be an allowable claim. Further, it is respectfully submitted that many of dependent claims 2, 3 and 6-39 recite additional elements that qualify the claims to be deemed independently allowable. To the extent that the Examiner relies on other references (i.e., the Baker and Comerford references) under 35 U.S.C. §103, it is respectfully submitted that those references do not remedy the inability of the Hataoka reference to teach or suggest the elements of the claims.

Still further, according to Section 2142 of the M.P.E.P., the examiner bears the initial burden of factually supporting any *prima facie* conclusions of obviousness. In order to establish a *prima facie* case of obviousness in instances where multiple references are cited in combination, the Examiner must show 1) that a suggestion exists for combining the references, and

2) that the combined references teach or suggest all the recited claim limitations. Id. For reasons that will be discussed thoroughly below, with regard at least to claims 3, 6-9, 12, 17, 19, 22, 23 and 25-35, it is respectfully submitted that the Examiner in the present case has failed to support any *prima facie* conclusion of obviousness.

The rejection of each of claims 3, 6-9, 12, 17, 19, 22, 23 and 25-35 is based on a rationale of obviousness under 35 U.S.C. §103. The rejection is based one of the Baker and Comerford references in combination with the Hataoka reference. In support of rejection, the only stated motivation for combining references is a simple statement of benefit associated with one of the references in the combination (i.e., "because it would allow the system to use a grammar associated with the application hence giving better results" or "because it would enable the system to evaluate the surrounding vocabulary hence allowing the best recognition result to be obtained").

It is fundamental that rejections under 35 U.S.C. §103 must be based on evidence comprehended by the language of that section. In re Grasselli, 713 F.2d 731, 739, 218 USPQ 769, 775 (Fed. Cir. 1983). The factual inquiry as to whether an invention is obvious in view of prior art must be based on objective evidence of record. In re Lee, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002).

In the present case, the Examiner has provided no reasonable rationale as to why it would be obvious to combine the cited references. In fact, the three cited references are related to three applications within the art that are remotely related. Outside of a single benefit associated with an invention extracted from the prior art, the Examiner does not give any indication as to why one skilled in the art would have been so motivated to conceive the proposed combinations. No specific citations are made to any of the cited references that would demonstrate a

teaching or suggestion to support a finding that the claimed features are obvious. No explanation is provided as to what knowledge possessed or specific principle known by a skilled artisan would lead to conception of the claimed features. No recognition is given to applicable trends in the art. No explanation is given as to how or why one skilled in the art would be lead to the claimed invention.

Applicant has been left to assume that the only motivation for the alleged obviousness is impermissible hindsight gleaned from the present invention. See, e.g., Ex parte Haymond, 41 USPQ2d 1217, 1220 (BdPatApp&Int 1996) (the examiner may not, because he doubts that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in the factual basis). Simply stated, the Office Action of record does not provide any objective evidence that shows a motivation as to why Applicant's claims 3, 6-9, 12, 17, 19, 22, 23 and 25-35 are obvious in view of the combination of cited references. Applicant therefore submits that no *prima facie* case of obviousness has been established. Applicant respectfully submits that these claims are allowable for this additional reason.

Still further, in the latest Office Action, in the rejection of at least claims 9, 14, 21, 24 and 39, claim elements missing from the cited prior art are accounted for based on a finding of Official Notice. Consistent with M.P.E.P. §2144.03, Official Notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known. Even assuming, arguendo, that the missing elements from Applicant's claims are known in the art, Applicant rejects any assumption that such elements are known in their claimed context of a middleware environment, especially considering the claimed

application- and engine-independent interfaces. Consistent with §2144.03, Applicant hereby traverses all assertions of Official Notice in the latest Office Action and requests that Examiner support such findings with adequate evidence.

In summary, it is respectfully submitted that all pending claims, namely, 1-39, 47 and 50-54 are in condition for allowance. Consideration and allowance of these claims are respectfully solicited. The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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